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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,327	03/26/2004	Brian Maki	85285-102 ADB	7975

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EXAMINER

FULLER, ROBERT EDWARD

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 02/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/810,327	Applicant(s) MAKI, BRIAN	
	Examiner Robert E. Fuller	Art Unit 3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. [1] as follows:

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Canada on April 7, 2003. It is noted, however, that applicant has not filed a certified copy of the Canadian application as required by 35 U.S.C. 119(b).

Specification

2. The abstract of the disclosure is objected to because the first sentence of the abstract is grammatically incorrect. The phrase "for example for ice" should either be deleted or some punctuation should be added to make the sentence read properly. Also, the second sentence of the abstract is a run-on sentence. Examiner suggests it be changed to --The second auger blade has a smaller diameter than the first, is shorter than the first, and is arranged with the helical turns thereof in opposed angular direction--. Correction is required. See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities: The first sentence of paragraph 0002 is a run-on sentence. Examiner suggests that a period be inserted in between "sizes" and "usually." Furthermore, the third sentence of paragraph 0021 is a run-on sentence. Examiner suggests it be changed to --This can be difficult and even dangerous if the auger gets away, which is especially a problem on glare ice,

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where proper footing cannot be found--. Finally, in the second sentence of paragraph 0043, examiner suggests that the word "with" be changed to --which--.

Appropriate correction is required.

Claim Objections

4. Claim 10 is objected to because of the following informalities: There is a typographical error in claim 10 because the second drive core is referred to twice. Examiner understands that the claim is meant to read as --The cutting auger according to claim 9 wherein the second drive core is driven by the sun of the planetary gear set and the *first drive core* is driven by the ring of the planetary gear set--. Appropriate correction is required.

5. Claim 12 is objected to because of the following informalities: Examiner understands that the word "case" in claim 12 should be replaced by the word --core--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Examiner understands that the diameter of the cutting augers should be selected first, based upon the size of the hole that must be created. The necessary relative speed of each auger would then be determined based upon those

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diameters, the objective being to balance the torque. Clarification and correction are required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-4, 7, 8¹³, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Brocas (US 3,572,449). For the purposes of examination, claim 14 is being read as follows: "The cutting auger according to Claim 1 wherein the difference in speed of the cutting augers is arranged relative to the ratio of the diameters thereof such that the torque is substantially balanced when both cutting augers are cutting."

With regard to claim 1, Brocas discloses a machine for boring holes. Brocas's device has the following features:

- a. A first auger blade having a first drive core and a first helical auger flight carried on the first drive core for rotation about a longitudinal axis of the first drive core with a cutting edge at an axial end face of the first auger flight such that when rotated the cutting edge cuts a hole equal in diameter to the helical flight and the helical flight carries the cut material away from the cutting edge; (figure 1, item 8)
- b. a second auger blade having a second drive core and a second helical auger flight carried on the second drive core for rotation about a longitudinal axis

of the second drive core with a cutting edge at an axial end face of the second auger flight such that when rotated the cutting edge cuts a hole equal in diameter to the helical flight and the helical flight carries the cut material away from the cutting edge; the second auger blade being coaxial with the first and arranged with the cutting edge thereof axially in advance of the first; (figure 1, item 58)

c. the second auger blade having a smaller diameter than the first; the first and second helical auger flights being arranged with the helical turns thereof in opposed angular direction; (figure 1, items 8 and 58)

d. and a drive assembly arranged to rotate the first and second cutting augers in opposed direction with the first driven at a slower angular velocity than the second (column 4, line 14-23).

With regard to claim 2, Brocas discloses a drive assembly mounted at a rear end of the first cutting auger (figure 1).

With regard to claim 3, Brocas discloses handles for manually holding the cutting auger for preventing rotation of the cutting auger about the axis (figure 1, item 29a).

With regard to claim 4, Brocas's device can be powered by a motor (figure 1, item 2).

With regard to claim 7, Brocas teaches that the second cutting auger has a rear end adjacent the cutting edge of the first auger (figure 1, items 8 and 58).

With regard to claim 8, the second cutting auger of Brocas (figure 1, item 58) is shorter than the first cutting auger (figure 1, item 8).

With regard to claim 13, Brocas discloses a boring device capable of varying the relative angular velocities of the cutting augers (items 8 and 58) depending on the loads each cutter is subjected to. Brocas further teaches that the first auger can be driven at a speed ranging from the same speed as the second auger to fully stopped, which would encompass a speed that is $1/3$ that of the second auger.

With regard to claim 14, the device of Brocas is designed so that "The torque reaction of the [second auger] is balanced by against the torque reaction of the [first auger]. Thus, the diameters of the two augers would have to be designed in such a way that the torque balance would be achieved, taking into account the relative speeds of each auger.

Claim Rejections - 35 USC § 103

10. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brocas in view of Chou (US 6,675,918).

With regard to claim 5, Brocas discloses all of the limitations of the above claims, except for the drive assembly including a manually operable crank.

Chou discloses an earth auger device. Chou further teaches an earth auger operable by a manual crank (figure 1, item 1).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have replaced the motor of Brocas with the hand crank of Chou in order to have provided a means for operating the earth auger device without the necessity of a power source such as gasoline or electricity, as they would not have

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been available near the remote areas where the auger might have been used, such as ice shelves.

With regard to claim 6, Brocas fails to disclose a manual crank including a ratchet.

Chou discloses an earth auger device. Chou further teaches a ratchet (figure 1, item 221) attached to the manual crank (figure 1, item 1).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have replaced the motorized drive assembly of Brocas with the crank and ratchet assembly of Chou, in order to have allowed the auger device to operate in an "effort saving fashion" (Chou Abstract).

11. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brocas in view of Birkigt (US 2,261,104).

With regard to claim 9, Brocas fails to disclose the drive assembly including a planetary gear set.

Birkigt discloses a means for driving two coaxial shafts in opposite directions. Birkigt's device includes a drive assembly which has a planetary gear set (figure 1, items 3, 8, 9, 10, 11, and 12).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have replaced the drive system of Brocas with that of Birkigt, in order to have provided a power transmission of "reduced bulk" (column 1, line 28) capable of driving the two auger shafts in opposite directions.

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With regard to claim 10, Brocas fails to disclose the second drive core being driven by the sun of the planetary gear set and the first drive core being driven by the ring of the planetary gear set.

Birkigt discloses a drive system wherein the second drive core (item 2) is driven by the sun (item 3) of the planetary gear set and the first drive core (item 1) is driven by the ring (item 9) of the planetary gear set.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have replaced the drive system of Brocas with that of Birkigt, in order to have provided a power transmission of "reduced bulk" (column 1, line 28) capable of driving the two auger shafts in opposite directions.

With regard to claim 11, Brocas fails to disclose the drive assembly having two planetary gear sets arranged axially spaced.

Birkigt discloses a drive assembly which has two sets of planetary gears axially spaced (items 3, 8 and 9; and items 11 and 7).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have replaced the drive system of Brocas with that of Birkigt, in order to have provided a power transmission of "reduced bulk" (column 1, line 28) capable of driving the two auger shafts in opposite directions.

With regard to claim 12, Brocas fails to disclose a transmission system of the same structure as the claimed invention.

Birkigt discloses a second drive core (item 2) connected to the planets (item 8) of a first planetary gear set, where the sun (item 3) of the first planetary gear set is driven,

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wherein the sun (item 7) of the second planetary gear set is driven commonly with the second drive core (item 2) and wherein the first drive core (item 1) is driven from the ring (item 12) of the second gear set.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have replaced the drive system of Brocas with that of Birkigt, in order to have provided a power transmission of "reduced bulk" (column 1, line 28) capable of driving the two auger shafts in opposite directions.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

These references further teach the state of the art with regard to earth auger devices and drive mechanisms for driving two shafts in opposite directions:

US 2,250,671 – Joy

US 2,148,313 – Williams

These references further teach the use of hand cranks:

US 5,038,870 – Kuronen

US 4,947,943 – Litwak

US 4,819,744 – Caswell


13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert E. Fuller whose telephone number is 571-272-0419. The examiner can normally be reached Monday thru Friday from 8:00 AM - 5:30 PM. The examiner is normally out of the office every other Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

02/09/2006
REF


Jennifer H. Gay
Primary Examiner